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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,466	01/10/2002	Dennis J. Brunner	89190.079101/DP-305547	9887

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EXAMINER	
FERGUSON, MICHAEL P	

ART UNIT	PAPER NUMBER
3679	

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/044,466	BRUNNER ET AL.	
	Examiner	Art Unit	
	Michael P. Ferguson	3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,13 and 14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,13 and 14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-9 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Morelli et al. (US 5,688,070).

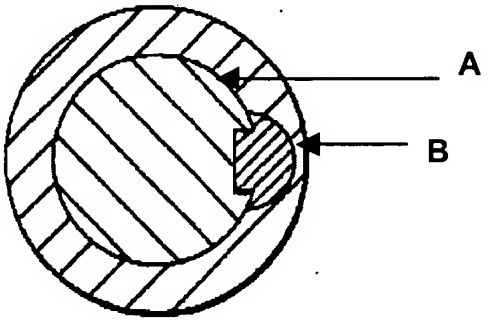
As to claim 1, Morelli et al. disclose an apparatus for securing a hub to a shaft, comprising:

a) a cylindrical shaft **144** having a longitudinal keyway formed in an outer surface thereof, the keyway having a bottom portion and two side walls;

b) a hub **164** having a cylindrical axial bore defining a wall **A** (Figure 6f reprinted below with annotations) in the hub and being disposable on the shaft to define a maximum distance from the keyway bottom portion to the bore wall, the wall being cylindrical about the entire surface of the axial bore (having a cylindrical keyway **B**; the wall **A** relating to the form of a cylinder **A,B** along the entire surface of the axial bore); and

c) a tapered locking key **56,171** (taper shown in Figure 4) for insertion into the keyway between the keyway bottom portion and the bore wall, the key having a pre-insertion maximum height greater than the maximum distance such that the hub is

deformed by the insertion, whereby the hub is rotationally and axially secured onto the shaft (Figures 4, 6a, 6c and 6f, column 1 lines 12-36, column 4 lines 9-39).



As to claim 2, Morelli et al. disclose an apparatus wherein a hub **164** is formed of a deformable polymer having a first hardness (column 4 lines 9-39).

As to claim 3, Morelli et al. disclose an apparatus wherein a key **171** is formed of metal (column 4 lines 9-39).

As to claim 4, Morelli et al. disclose an apparatus wherein a key **171** has a second hardness greater than a first hardness (column 4 lines 9-39).

As to claim 5, Morelli et al. disclose an apparatus wherein a locking key **171** is an end key in a chain of connected keys (inherently, through the manufacturing process, whether extrusion or casting, locking key **171** is severed from a mass of raw material from which a chain of keys is produced), the end key being severable from the chain (during the manufacturing process).

Applicant is reminded that process limitations are given no patentable weight in product claims. See MPEP § 2113. "The patentability of a product does not depend on its method of production. " In re Thorpe, 777 F.2d 695,698,USPQ 964,966 (Fed.Cir.1985).

As to claim 6, Morelli et al. disclose an apparatus wherein a shaft **144** is a throttle shaft (shaft **144** controls the speed at which other gears or members which are meshed with hub **164** rotate; thus shaft **144** defines a throttle shaft) and a hub **164** is a portion of a shaft rotary position sensor (other gears or members rotate in response to the rotary position of hub **164**; thus hub **164** defines a rotary position sensor; Figures 6a, 6c and 6f).

As to claim 7, Morelli et al. disclose a method for securing a hub **164** having a cylindrical axial bore defined by a bore wall **A** onto a cylindrical shaft **144**, the bore wall being cylindrical about the entire surface of the axial bore (having a cylindrical keyway **B**; the bore wall **A** relating to the form of a cylinder along the entire surface of the axial bore), the method comprising the steps of:

a) providing a longitudinal keyway in the shaft, the keyway having a bottom portion and two side walls;

b) disposing the entirely cylindrical axial bore of the hub onto the shaft to define a maximum distance between the keyway bottom portion and the bore wall;

c) providing a wedging means **171**; and

d) inserting the wedging means into the keyway between the keyway bottom portion and the bore wall (Figures 4, 6a, 6c and 6f, column 1 lines 12-36, column 4 lines 9-39).

As to claim 8, Morelli et al. disclose a method wherein a wedging means **171** is a locking key having a maximum height greater than a maximum distance (Figures 4, 6a, 6c and 6f).

As to claim 9, Morelli et al. disclose a method further comprising the step of advancing a locking key **171** into a keyway until the point of a maximum height is axially centered within a hub bore (Figures 4, 6a, 6c and 6f).

As to claim 14, Morelli et al. disclose an apparatus wherein the locking key **56** is longitudinally tapered (having a tapered lengthwise edge; Figure 4).

3. Claims 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kindelmann et al. (US 1,866,112).

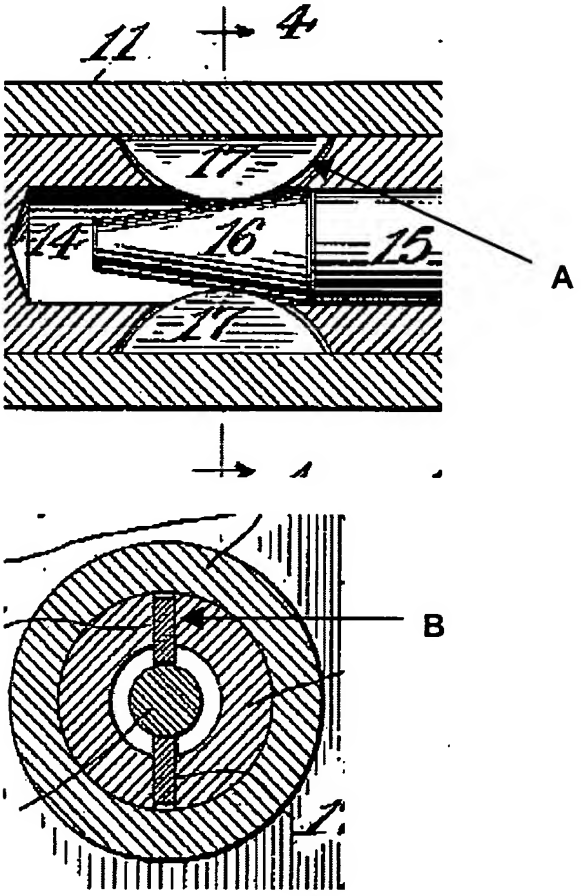
As to claim 7, Kindelmann et al. discloses a method for securing a hub **10** having a cylindrical axial bore defined by a bore wall onto a cylindrical shaft **12**, the bore wall being cylindrical about the entire surface of the axial bore, the method comprising the steps of:

a) providing a longitudinal keyway in the shaft, the keyway having a bottom portion **A** and two side walls **B** (Figures 2 and 3 reprinted below with annotations);

b) disposing the entirely cylindrical axial bore of the hub onto the shaft to define a maximum distance between the keyway bottom portion and the bore wall;

c) providing a wedging means **17**; and

d) inserting the wedging means into the keyway between the keyway bottom portion and the bore wall (Figures 1-4).



As to claim 8, Kindelmann et al. discloses a method wherein a wedging means **17** is a locking key having a maximum height greater than a maximum distance (Figures 1 and 2).

As to claim 9, Kindelmann et al. discloses a method further comprising the step of advancing a locking key **17** into a keyway until the point of a maximum height is axially centered within a hub bore (Figures 1and 2).

4. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Preston, Sr. (US 1,560,399).

As to claim 13, Preston, Sr. discloses an apparatus for securing a hub to a shaft, comprising:

a) a shaft **22** having an entirely cylindrical outer surface;

b) a hub **20** having an axial bore defining a wall in the hub and having a longitudinal keyway formed in an inner surface thereof, the keyway having a bottom portion, the hub being disposable on the shaft to define a maximum distance from the keyway bottom portion to the outer surface; and

c) a longitudinally tapered (having a tapered lengthwise edge) locking key **10** for insertion into the keyway between the keyway bottom portion and the shaft surface, the key having a pre-insertion maximum height greater than the maximum distance such that the shaft is deformed by the insertion, whereby the hub is rotationally and axially secured onto the shaft (Figures 3-9).

Response to Arguments

5. Applicant's arguments filed August 3, 2004 have been fully considered but they are not persuasive.

As to claims 1 and 7, Attorney argues that:

Morelli et al. do not disclose an apparatus having a hub having a cylindrical axial bore defining a wall that is *cylindrical about the entire surface of the axial bore*.

Examiner disagrees. As to claims 1 and 7, Morelli et al. disclose an apparatus having a hub **164** having a cylindrical axial bore defining a wall **A** that is cylindrical about the entire surface of the axial bore (having a cylindrical keyway **B**; the wall **A** relating to the form of a cylinder **A,B** along the entire surface of the axial bore; Figures 6a, 6c and 6f). Examiner notes that claims 1 and 7 do not claim that the entire surface

of the axial bore is defined at a constant radial distance from a central axis of the axial bore.

As to claim 7, Attorney argues that:

Kindelmann et al. do not disclose a method comprising providing a longitudinal keyway in a shaft, *the keyway having a bottom portion and two side walls.*

Examiner disagrees. As to claim 7, Kindelmann et al. disclose a method comprising providing a longitudinal keyway in a shaft **12**, the keyway having a bottom portion **A** and two side walls **B** (Figures 1-4). Examiner notes that claim 7 does not claim a shaft having a solid cross-section along its entire length.

As to claim 13, Attorney argues that:

Preston, Sr. discloses an apparatus comprising *a longitudinally tapered locking key.*

Examiner disagrees. As to claim 13, Preston, Sr. discloses an apparatus comprising a longitudinally tapered (having a tapered lengthwise edge) locking key **10** (Figure 4). Examiner notes that claim 13 does not claim that the radial height of the locking key is tapered along a longitudinal axis parallel with an axis of the axial bore.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Ferguson whose telephone number is (703)308-8591. The examiner can normally be reached on M-F (7:30-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (703)308-2686. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MPF
09/28/04

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